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ABSTRACT

The silicon etching apparatus using XeF_2 includes: a basic structure composed of a loading chamber for loading XeF_2 , an expansion chamber for collecting sublimated XeF_2 gas, and an etching chamber for performing an etching process; and a means for injecting

5 nitrogen prior to the etching process to eliminate air moisture in the apparatus and thus preventing the formation of HF. The silicon etching apparatus using XeF_2 further includes: an injector having a predefined shape provided in the etching chamber for uniformly injecting the XeF_2 gas downward on to surface of a wafer; a feedback controller for feedback controlling the internal pressure of the loading chamber in order to prevent

10 sublimation of the residual XeF_2 in the loading chamber; and a weight scale for measuring the weight of XeF_2 in the loading chamber.

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